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Temperature dependence of the anomalous exponent in Li(0.9)Mo(6)O(17) that reveals Luttinger Liquid behavior RENE MATZDORF, TATJANA NOVGORODOV, BERNARD NANSSEU, MICHAEL WAELSCH, University of Kassel, JIAN HE, RONGYING JIN, DAVID MANDRUS, Oak Ridge National Laboratory — Scanning tunneling spectroscopy (STS) has been used to study the Luttinger-liquid behavior of the purple bronze Li(0.9)Mo(6)O(17) in the temperature range 5K \leq T \leq 300K. In the entire temperature range the suppression of density of states at the Fermi-energy could be fitted very good by a model describing the tunneling into a Luttinger liquid at ambient temperature. The power-law exponent extracted from these fits reveals a significant increase above 200K. It changes from $\alpha=0.6$ at low temperature to $\alpha=1.0$ at room temperature.

Rene Matzdorf
University of Kassel

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